City of Carmel Utilities

3450 W. 131st. Street
Carmel, In. 46074

317-733-2855
Fax: 317-733-2053

CITY of CARMEL WATER DISTRIBUTION
3"thru 8" INSIDE TURBINE METER SETS

1. All new commercial buildings are required Back flow Devices.
2. All new businesses relocating in existing commercial buildings are required backflow devices within 30 days.
3. Devices shall be of the type approved by Indiana Department of Environmental Management.
4. Depending on the degree of hazard, the Water Distribution Department will decide if you need a Double Check or a Reduced Pressure backflow device.
5. The device must be tested at the time of installation by a State Certified Backflow tester and at the correct intervals for the type of device.
6. Test results are to be sent to: Carmel Utilities 3450 W.131ST ST., Carmel, IN. 46074.
7. **Any inside set that is below Ground Level must have a conduit ran to locate our Radio Transmitter at ground level or on an Outside Wall.**

INSTALLATION INSTRUCTIONS

All HP Turbine meters operate more accurately and reliably if installed properly. Turbine meter performance is directly related to the flow conditions of the water stream entering the meter. If the flow conditions are distorted because of upstream fittings or piping changes, a turbine meter's performance can be adversely affected.

Neptune recommends that you install all HP Turbine meters with a Neptune strainer at the meter inlet. The strainer, in addition to protecting the meter from debris in the line, also corrects the velocity profile of the flow to the meter and reduces the effects of upstream piping variations or other obstructions in the line.

When installing Neptune meters with a strainer, a minimum of four (4) pipe diameters of straight run pipe (can include components that are fully open in their normal operating position) is required upstream and downstream of the meter/strainer assembly.

If you do not use a strainer, a length of straight pipe equal to 8 to 10 diameters of the nominal pipe size should be allowed immediately upstream of the meter inlet and 2 to 4 diameters downstream. When installing an HP Turbine meter, please use the following instructions.

RECOMMENDED INSTALLATION

Figure 1.1 shows the recommended installation of an HP Turbine meter. This installation incorporates a Neptune strainer attached to the inlet of the meter and includes a downstream tee to facilitate field testing. This illustration also shows an optional bypass that provides uninterrupted service capability during periods of meter service.

As indicated previously, the Neptune strainer located upstream provides protection against meter damage from debris in the lines and virtually eliminates the effects of variations in upstream piping. Neptune specifically recommends use of a Neptune strainer of the same line size as the meter.

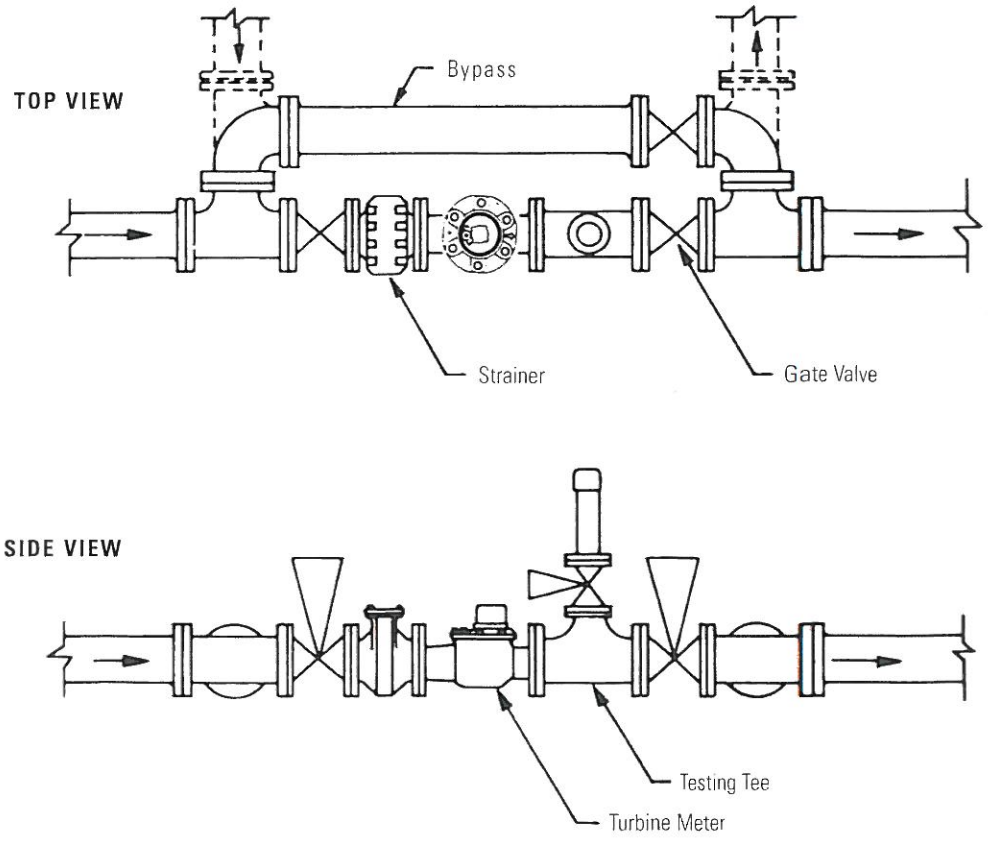


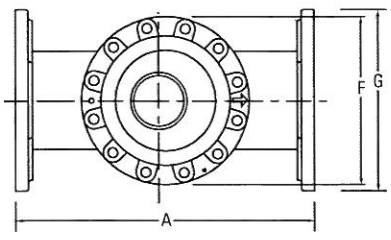
Figure 1.1 Top and Side View of the HP Turbine

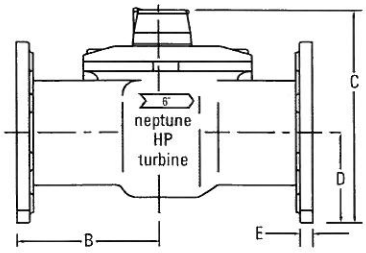
OPERATING CHARACTERISTICS

Meter Size	Normal Operating Range @100% Accuracy (±1.5%)	Maximum Intermittent Flow	AWWA Standard
1 1/2"	4 to 160 US gpm 0.91 to 36.3 m³/h	200 US gpm 45.4 m³/h	N/A
2"	4 to 200 US gpm 0.91 to 45.4 m³/h	250 US gpm 56.8 m³/h	4 to 160 US gpm 0.91 to 36.3 m³/h
3"	5 to 450 US gpm 1.14 to 102.2 m³/h	560 US gpm 127.2 m³/h	8 to 350 US gpm 1.8 to 79.5 m³/h
4"	10 to 1200 US gpm 2.27 to 272.5 m³/h	1500 US gpm 340.7 m³/h	15 to 630 US gpm 3.4 to 143.0 m³/h
6"	20 to 2500 US gpm 4.55 to 567.8 m³/h	3100 US gpm 704.1 m³/h	30 to 1400 US gpm 6.8 to 317.9 m³/h
8"	35 to 4000 US gpm 7.95 to 908.5 m³/h	5000 US gpm 1135.6 m³/h	50 to 2400 US gpm 11.4 to 545 m³/h
10"	50 to 6500 US gpm 11.36 to 1476.3 m³/h	8000 US gpm 1817 m³/h	75 to 3800 US gpm 17.0 to 863 m³/h

DIMENSIONS

Meter Size	A in (mm)	B in (mm)	C-STD in (mm)	C-ProRead™ in (mm)	C-E-Coder)R900*i*™ in (mm)	D in (mm)	E in (mm)	F in (mm)	G in (mm)	Weight lbs (kg)
1 1/2"	10 (254)	6 1/2 (165)	7 1/8 (181)	7 9/16 (192)	10 7/8 (276.2)	1 3/4 (44)	3/4 (19)	4 1/2 (114)	5 3/8 (137)	19 (8.6)
2"	10 (254)	6 1/2 (165)	7 5/8 (194)	8 1/16 (204.8)	11 3/8 (288.9)	2 1/8 (54)	13/16 (21)	4 1/2 (114)	5 3/8 (137)	20 (9.1)
3"	12 (305)	6 (152)	10 (254)	10 7/16 (265.1)	13 3/4 (349.3)	3 3/4 (95)	5/8 (16)	6 1/4 (159)	7 1/2 (191)	40 (18.1)
4"	14 (356)	6 1/2 (165)	10 7/8 (276)	11 5/16 (287.3)	14 5/8 (371.4)	4 1/2 (114)	3/4 (19)	8 1/8 (206)	9 (229)	52 (23.6)
6"	18 (457)	8 5/8 (219)	13 (330)	13 7/16 (341.3)	16 3/4 (425.5)	5 1/2 (140)	1 (25)	10 1/4 (260)	11 (279)	115 (52.2)
8"	20 (508)	9 5/8 (244)	15 1/2 (394)	15 15/16 (404.8)	19 1/4 (489)	6 3/4 (171)	1 1/8 (29)	10 1/4 (260)	13 1/2 (343)	195 (88.4)
10"	26 (660)	12 5/8 (321)	15 1/2 (394)	15 15/16 (404.8)	19 1/4 (489)	8 (203)	1 1/4 (32)	10 1/4 (260)	16 (406)	275 (124.7)

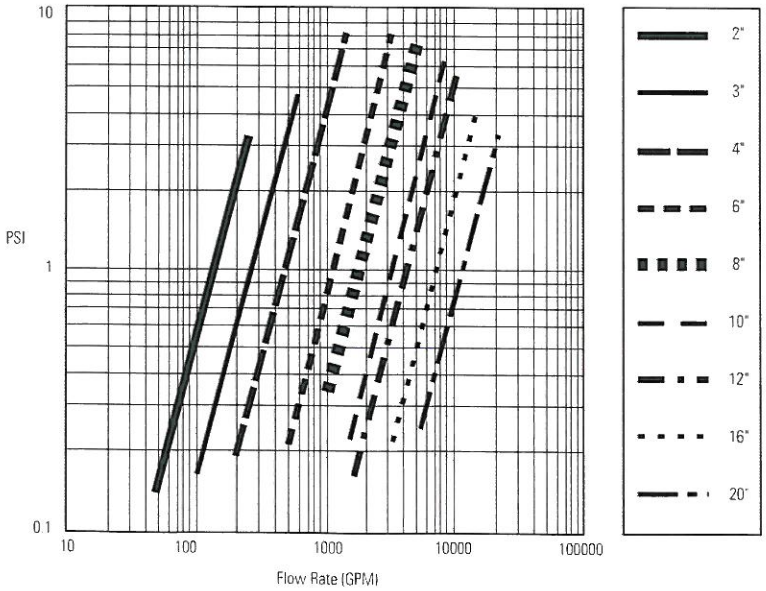




DIMENSIONS

Meter Size	A in/mm	B in/mm	C in/mm	D in/mm	E in/mm	F in/mm	No. of Holes	Hole Dia. in/mm	Weight lbs/kg
2"	7	6	5 1/4	2 1/8	4 1/2	3/4	2	3/4	16
	178	152	133	54	114	19		19	7.3
3"	6	8 1/2	8 3/4	3 3/4	6	5/8	4	3/4	32
	152	216	222	95	152	16		19	14.5
4"	7 1/2	9 3/4	10 1/2	4 1/2	7 1/2	11/16	8	3/4	42
	191	248	267	114	191	17		19	19.0
6"	9	11 3/4	11 1/2	5 1/2	9 1/2	7/8	8	7/8	80
	229	298	292	140	241	22		22	36.3
8"	10	14	13 1/2	6 3/4	11 3/4	1 1/8	8	7/8	120
	254	356	343	171	298	29		22	54.5
10"	15	18 1/4	18 1/4	8	14 1/4	1 3/16	12	1	160
	381	464	464	203	362	30		25	72.6
12"	16 7/8	18 7/8	20 1/2	9 1/2	17	13/16	12	1	180
	429	479	521	241	432	21		25	81.6
16"	25 1/4	28	20 3/4	11 3/4	21 1/4	1	16	1 1/4	240
	641	711	527	299	540	25		29	108.8
20"	18 5/8	28	26 1/8	13 3/4	25	1 1/8	20	1 1/4	300
	473	711	664	349	635	29		32	136.0

PRESSURE LOSS



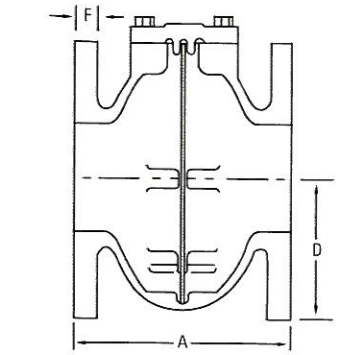
This chart shows typical meter performance. Individual results may vary.

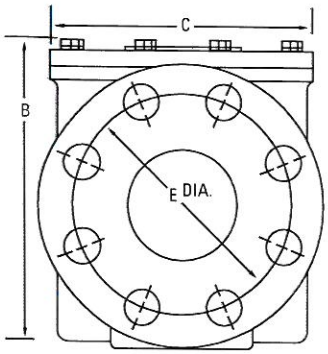
STRAINER PARTS NUMBERS

- 2" 53120-000 No-lead high copper alloy
- 3" 53107-000 No-lead high copper alloy
- 4" 53107-100 No-lead high copper alloy
- 6" 52000-201 No-lead high copper alloy
- 8" 52000-304 No-lead high copper alloy
- 10" 52000-402 No-lead high copper alloy
- 12" 9276-000 Steel
- 16" 9276-100 Steel
- 20" 9276-200 Steel

MAXIMUM OPERATING PRESSURE

- 150 psi





Neptune engages in ongoing research and development to improve and enhance its products. Therefore, Neptune reserves the right to change product or system specifications without notice.